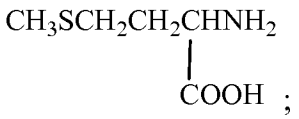
CLAIMS:

1. (previously presented) A method for reducing oral mucositis in a human or animal patient exposed to radiation, the method comprising administering to said patient an effective amount of a protective agent comprising methionine having the structure



or a pharmaceutically acceptable salt thereof.

2. (cancelled)

3. (previously presented) A method as set forth in claim 1, wherein the protective agent is selected from the group consisting of D-methionine, L-methionine, a mixture of D-methionine and L-methionine, a pharmaceutically acceptable salt thereof, and a combination thereof.

4. (original) A method as set forth in claim 3, wherein the protective agent is D-methionine.

5. (original) A method as set forth in claim 3, wherein the protective agent is L-methionine.

6. (original) A method as set forth in claim 3, wherein the protective agent is D,L-methionine.

7. (original) A method as set forth in claim 1, wherein the protective agent is administered prior to said radiation exposure.

8. (original) A method as set forth in claim 1, wherein the protective agent is administered simultaneously with said radiation exposure.

9. (original) A method as set forth in claim 1, wherein the protective agent is administered subsequently to said radiation exposure.

10. (currently amended) A method as set forth in claim 1, wherein the effective amount of the protective agent is administered to said patient in a time period of from ~~about~~ 6 hours before to ~~about~~ 6 hours after the exposure to radiation.

11. (currently amended) A method as set forth in claim 1, wherein the effective amount of the protective agent is administered to said patient in a time period of from ~~about~~ 1 hour before to ~~about~~ 1 hour after the exposure to radiation.

12. (currently amended) A method as set forth in claim 1, wherein the effective amount of the protective agent is administered to said patient in a time period of from ~~about~~ one-half hour before to ~~about~~ one-half hour after the exposure to radiation.

13. (currently amended) A method as set forth in claim 1, wherein effective amount of the protective agent is administered to said patient orally, parenterally or topically, and the administration of said effective amount of protective agent results in a blood serum level equivalent to that achieved by parenteral administration in the range of from ~~about~~ 1.0 mg/kg body weight to ~~about~~ 600 mg/kg body weight.

14. (currently amended) A method as set forth in claim 13, wherein the administration of said effective amount of the protective agent results in a blood serum level equivalent to that achieved by parenteral administration in the range of from ~~about~~ 5 mg/kg body weight to ~~about~~ 500 mg/kg body weight.

15. (currently amended) A method as set forth in claim 13, wherein the administration of said effective amount of the protective agent results in a blood serum level equivalent to that achieved by parenteral administration in the range of from ~~about~~ 10 mg/kg body weight to ~~about~~ 400 mg/kg body weight.

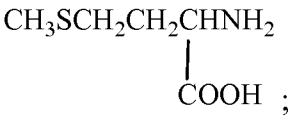
16. (original) A method as set forth in claim 1, further comprising administering to said patient a supplemental amount of the protective agent after the administration of said effective amount.

17. (original) A method as set forth in claim 16, wherein said supplemental amount of the protective agent is administered orally, parenterally, or topically to said patient.

18. (currently amended) A method as set forth in claim 17, wherein the administration of said supplemental amount of the protective agent is sufficient to maintain a blood serum level of protective agent within said patient of at least ~~about~~ 10% of the blood serum level achieved by administration of the effective amount of the protective agent.

19. (currently amended) A method as set forth in claim 18, wherein the administration of said supplemental amount of the protective agent is sufficient to maintain a blood serum level of protective agent within said patient of from ~~about~~ 20% to ~~about~~ 70% of the blood serum level achieved by administration of the effective amount of the protective agent.

20. (previously presented) A method for reducing oral mucositis in a human or animal patient undergoing treatment with a chemotherapeutic effective amount of an anti-tumor platinum-coordination compound, the method comprising administering to said patient an effective amount of a protective agent comprising methionine having the structure



or a pharmaceutically acceptable salt thereof.

21. (cancelled)

22. (previously presented) A method as set forth in claim 20, wherein the protective agent is selected from the group consisting of D-methionine, L-methionine, a mixture of D-

methionine and L-methionine, a pharmaceutically acceptable salt thereof, and a combination thereof.

23. (original) A method as set forth in claim 20, wherein the protective agent is administered prior to the administration of said chemotherapeutic effective amount of anti-tumor platinum-coordination compound.

24. (original) A method as set forth in claim 20, wherein the protective agent is administered simultaneously with the administration of said chemotherapeutic effective amount of anti-tumor platinum-coordination compound.

25. (original) A method as set forth in claim 20, wherein the protective agent is administered subsequently to the administration of said chemotherapeutic effective amount of anti-tumor platinum-coordination compound.

26. (currently amended) A method as set forth in claim 20, wherein the protective agent is administered orally, parenterally or topically to said patient, and the administration of said effective amount of the protective agent results in a blood serum level equivalent to that achieved by parenteral administration in the range of from ~~about~~ 1.0 mg/kg body weight to ~~about~~ 600 mg/kg body weight.

27. (currently amended) A method as set forth in claim 26, wherein the administration of said effective amount of the protective agent results in a blood serum level equivalent to that achieved by parenteral administration in the range of from ~~about~~ 5 mg/kg body weight to ~~about~~ 500 mg/kg body weight.

28. (currently amended) A method as set forth in claim 26, wherein the administration of said effective amount of the protective agent results in a blood serum level equivalent to that achieved by parenteral administration in the range of from ~~about~~ 10 mg/kg body weight to ~~about~~ 400 mg/kg body weight.

29. (original) A method as set forth in claim 20, further comprising administering to said patient a supplemental amount of the protective agent after the administration of said effective amount.

30. (original) A method as set forth in claim 29, wherein said supplemental amount of the protective agent is administered orally, parenterally, or topically to said patient.

31. (currently amended) A method as set forth in claim 30, wherein the administration of said supplemental amount of the protective agent is sufficient to maintain a blood serum level of protective agent within said patient of at least ~~about~~ 10% of the blood serum level achieved by administration of the effective amount of the protective agent.

32. (currently amended) A method as set forth in claim 30, wherein the administration of said supplemental amount of the protective agent is sufficient to maintain a blood serum level of protective agent within said patient of from ~~about~~ 20% to ~~about~~ 70% of the blood serum level achieved by administration of the effective amount of the protective agent.

33.-37. (cancelled)

38. (new) The method as set forth in claim 1 wherein the patient is undergoing treatment with a chemotherapeutic effective amount of an anti-tumor platinum-coordination compound.

39. (new) The method as set forth in claim 38 wherein the anti-tumor platinum-coordination compound is cisplatin.

40. (new) The method as set forth in claim 39 wherein the protective agent is D-methionine.